

USAID WORKING PAPER

Urban and Industrial Pollution Programs

Czech Republic Case Study

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ACRONYMS

CAA	Clean Air Act
CPD	Credit Policy Department
EAPS	Environmental Action Programme Support Project
EU	European Union
EU-PHARE	European Union-Environmental Assistance Program for the CEE
MUFIS	U.S. Municipal Finance Program
NO _x	Nitrogen Oxides
NPOO	National Air Quality Program
PM	Particulate Matter
SO _x	Sulfur Oxides
SFZP	Czech State Fund for the Environment
TED	Technical Evaluation Department
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

The Environmental Action Programme Support Project (EAPS) was designed by USAID to decrease environmental degradation in six Central and Eastern European countries that were transitioning from centrally controlled economies and authoritarian governments to open markets and more democratic institutions. EAPS was launched as the U.S. response to a 1993 ministerial-level meeting held in Lucerne, Switzerland to develop a joint Environmental Action Programme. The Czech Republic was the first USAID-assisted country where EAPS was implemented. The EAPS Czech Republic project was a \$1.3 million, 28-month effort which began in March 1995 to strengthen the newly established Czech State Fund for the Environment (SFZP), and lend support to small municipalities seeking to mitigate environment pollution from energy utilities and local industries. Among other measures, this involved converting energy utilities from high sulfur coal to natural gas. A long-term residential advisor was placed at the SFZP (the “Fund”). Technical assistance was provided to 23 municipalities in Northern Bohemia and Northern Moravia (two geographic hotspots) to help them develop loan applications to be submitted to the Fund. The evaluation revealed strong evidence that the SFZP was significantly strengthened as a result of EAPS participation. EAPS provided solid policy and operational guidance to the Fund. The project prepared nearly a dozen targeted studies designed to help the Fund understand and move toward major policy and operational improvements. Many of the resulting recommendations were adopted and implemented. EAPS support and recommendations allowed the Fund to increase its annual environmental loan portfolio by nearly \$24 million and as a result make substantial reductions in the discharge of key air pollutants nationwide.

The evaluation also revealed that EAPS had positive impacts on assisting municipalities prepare their loan packages, but many indicated that EAPS assistance though helpful, was not really essential, i.e., most municipalities would have been able to obtain SFZP funding without project assistance. EAPS-assisted projects, that received SFZP funding and upgraded their energy utilities or industries, reduced pollution, but much less so than compared to what the Fund accomplished by adopting EAPS policy recommendations. With regard to helping other municipalities prepare loan packages, there was little evidence for replication beyond the targeted towns and cities. EAPS support to municipalities did result in a one-time \$3.2 million investment in new capital for environmental projects.

Six lessons learned from the EAPS experience in the Czech Republic are discussed. They include the observation that (a) environmental regulations (and meaningful enforcement) are necessary first steps for improving air quality; (b) domestic environmental Funds can be vital finance sources for municipal projects in transition countries; (c) environmental investment evaluation and packaging can be an effective tool, but not under all conditions and measuring its success can be difficult; (d) replication at the municipal level can work, but it requires an up-front strategy that takes into account the local context; and (e) in order for environmental funds to have the greatest societal impact, their dual purpose of providing financing and subsidizing socially desirable environmental investments must be emphasized.

I. REPORT OUTLINE

This report has seven chapters and five annexes. The first chapter—OUTLINE—describes the content of each subsequent chapter. The second chapter—INTRODUCTION—describes the general problem of air pollution in the Czech Republic and the underlying rationale for the Czech EAPS Project. The third chapter—BACKGROUND—provides more specific details about the EAPS Project including its genesis, the dual project assistance provided to the Czech State Fund for the Environment and to small municipalities in geographic “hot spots”, a sense of the broader macro-level conditions in which EAPS operated, and specific project details such as budget, project duration, etc. In the fourth chapter—PROGRAM ELEMENTS—EAPS is described in relation to the five elements (economic policies, government regulation, standards, institution building, education and awareness, and technology change) common to this multi-country CDIE case study of urban and industrial pollution. This chapter focuses on the extent to which EAPS was designed to utilize each element, as applicable to this particular project. The fifth chapter—IMPACTS—describes what EAPS accomplished in the Czech Republic along several different dimensions. The next chapter—PERFORMANCE—assesses the degree to which EAPS impacts were effective, sustainable and replicable. The seventh chapter—EAPS POLAND—takes a look at some additional study findings obtained from selected site visits to neighboring Poland. Finally, the last chapter—LESSONS LEARNED—describes what the team believes to be the important lessons learned; in effect the “take-home” message to inform USAID and its development partners under what conditions EAPS-like assistance is most useful. The annexes provide further information on EAPS objectives (Annex A), evaluation methodology (Annex B), leveraging (Annex C), loan approval rates (Annex D), and Washington and field contacts (Annex E).

II. INTRODUCTION

The Czech Republic was one of the first states of the former Warsaw Pact to begin restructuring its economy and adopt political reforms. It moved quickly to privatize state-held industries, to liberalize the election process, and to begin the process of delegating responsibilities to municipalities for environmental services. This peaceful transition in 1989 was dubbed the “velvet revolution.” The Czech Republic, officially formed 4 years later in 1993 after the break-up of Czechoslovakia, inherited nearly 70% of the industrial capacity of the former federation along with an environmental legacy of some of the worst polluted air in Central Europe. Poor air quality came from the burning of low-grade brown coal by inefficient and essentially unregulated industries using cheap energy sources, municipal/district heating plants using outdated technology and aging equipment, and the widespread reliance on coal for residential and commercial heating. Coal is the Czech Republic’s largest source of fuel today and still accounts for 56% of its primary energy consumption. Coal generates 78% of all electricity nationwide. As for other energy sources, the Czech Republic remains heavily dependent on imported oil (99%) and gas (98%).

As in many countries, industrial activity was pursued without regard for environmental consequences; and, as would be expected, a high price was paid. Air and water pollution remain the Czech Republic’s most severe environmental problems today. Improving ambient air quality has proved particularly difficult in some regions. Parts of Northern Bohemia in the Czech Republic, Silesia in Poland, and Saxony in southeast Germany are still referred to today as the “Black Triangle” because of the air pollution which blackens buildings and corrodes monuments. This noxious mixture contains high levels of the key air pollutants: sulfur dioxide (SO₂), nitrogen oxides (NO_x), and particulate matter (PM).

Air pollution alerts in Northern Bohemia and Northern Moravia were common from 1990 through 1996 especially during the winter season. During these months, central Europe comes under the influence of high-pressure systems, which result in only light winds. This is often accompanied by thermal inversions in many Czech cities in which a layer of cool air forms above warmer ground air, trapping suspended particles and other air pollutants. Such inversions can produce choking smog that can last for several days. These unusual climate conditions are made even worse by the high mountain ranges along the northern Czech border, which further hinder cross-country airflow. The inversions—and the smog and haze they create—are especially damaging to many municipalities situated in low-lying valleys. But things are getting much better in the Czech Republic. Recent air quality data, for example, show that SO₂, NO_x and PM-10 levels are steadily declining (EU PHARE-BT, 1998) and air pollution alerts are much less common than just a few years ago.

In 1991 the Czech Government drafted Air Quality Standards (Decree of the Federal Committee for Environment) that were amended in 1994 to become the nation’s first Clean Air Act (CAA).¹ Shortly thereafter, USAID launched its Environmental Action Programme Support (EAPS) Project in the Czech Republic, which focused on improving air quality in the two most polluted

¹The Government is now preparing new legislation to harmonize existing air quality standards with those outlined in the European Commission’s Air Quality Directives.

regions (Northern Bohemia and Northern Moravia). The Czech Government had already made a strong effort to improve air quality by curbing highly polluting industries and large power stations. With these major emitters in check, municipally owned district-heating facilities were the largest remaining sources of pollution.

EAPS was designed to reduce air pollution by helping these smaller municipalities² prepare loan applications to be submitted to the Czech State Fund for the Environment (SFZP). Such loans allowed municipalities to upgrade their heating from high sulfur coal to cleaner heating fuels. EAPS also worked to strengthen the Fund's institutional capacity. In May 2000, a four-person CDIE-led Team assessed the impact and effectiveness of this urban and industrial pollution prevention program³.

² While mainly helping municipalities, EAPS was also designed to assist industries.

³ The team conducted a more limited assessment of EAPS in Poland. Findings appear in Chapter VII.

III. BACKGROUND

A. Overview

EAPS was designed by USAID to decrease environmental degradation in seven Central and Eastern European countries⁴ as they made the difficult transition from centrally controlled economies and authoritarian governments to open markets and more democratic institutions. EAPS was launched as the U.S. government's response to a 1993 ministerial-level meeting held in Lucerne, Switzerland to develop a joint Environmental Action Programme. Members included Central and Eastern European governments, states of the former Soviet Union, western democracies, and representatives of the World Bank and European Bank for Reconstruction and Development (EBRD). The Lucerne strategy refocused USAID efforts to redress environmental damage and strengthen host-country institutional capacity to face ongoing and future environmental challenges. In the Czech Republic, EAPS was originally designed to achieve two environmental objectives (see: Annex A for more details). The first was to provide technical assistance and training to municipalities to help them obtain necessary investment financing for needed service upgrades from the domestic environmental fund. The second objective was to work with the Czech State Environmental Fund (SFZP) to facilitate lending, strengthen operations, and improve resource allocations.

B. Czech State Environmental Fund

When EAPS began in March 1995, most small Czech municipalities (cities, towns, and villages) were unable to get funding from commercial banks for needed environmental upgrades. Smaller municipalities whose access to commercial financing was especially limited were hardest hit, but many larger municipalities faced a similar fate. The core of Czech commercial banking was made up of just four large banks. The reluctance of Czech commercial banks to fund most municipalities was based on a number of standard financial risk factors (degree of solvency, liquidity, profitability, repayment potential, etc.). This is not too dissimilar to commercial banking conditions elsewhere, where municipal loans are often made through public rather than private banking sources. It is worth noting, for example, that the overwhelming majority of municipally owned environmental infrastructure in the US was accomplished through state and local bonds and by Federal grants—not by commercial loans. In the Czech Republic too, making commercial loans to municipalities was thought to be too high a risk. Moreover, such lending by Czech commercial banks was viewed simply as sailing on “uncharted waters”. Something else was needed.

In response, the Czech State Fund for the Environment⁵ (SFZP), operating under the Ministry of the Environment (MOE), was established in 1991 to provide financial support for environmental protection and to reduce any further threats to air, water, and soil quality⁶. While available to all municipalities, it was targeted at smaller municipalities throughout the country. The Fund

⁴ Czech Republic, Poland, Lithuania, Macedonia, Romania, Russia and Slovakia.

⁵ The SFZP is also referred to as the “Fund” throughout this evaluation.

⁶ In most EAPS assisted countries similar domestic environmental funds were established. The funds are “revolving” meaning they are continually re-capitalized with revenues derived from pollution permits fees and fines and penalties for non-compliance.

became operational in 1992 but as late as 1996 there was considerable uncertainty on the part of municipalities about how to submit a loan package and secure SFZP approval and subsequent funding. Most municipalities saw fund application procedures as obscure. Adding to the problem, Fund decisions were seen by many municipalities as based on political and personal connections, rather than on technical merit, environmental need, or any regional or other priority setting.

On the fund side, SFZP was not running as smoothly as originally planned and was initially overwhelmed with far too many applications given its staffing, technical resources, and initial capitalization. The Fund was oversubscribed – too many loan applications relative to available funding. In 1997 alone, 462 loan applications were submitted. Another vexing problem for the Fund was that the quality of the applications was generally considered quite poor technically.

C. Municipal Support

For most municipalities in 1995, there was little real understanding of how to package⁷ an investment loan that would survive a first-round review at the Fund. In addition, the prevailing view was that loan decisions could be capricious at best and highly political at worst. EAPS attempted to demystify the process by assisting municipalities with a range of technical assistance, training, and analytical support. EAPS selected municipal sites in Northern Bohemia and Northern Moravia—the two worst polluted regions. In a few instances EAPS support involved private entities, such as a leather tanning factory in Litomerice and a steel mill in Vratimov, but in both situations such support was very closely linked to municipal interests.

There were generally two types of EAPS municipal support offered, and in many localities both services were coordinated. The first type provided a direct grant to the municipality to undertake an independent feasibility study of the proposed environmental upgrade. The feasibility study generally provided municipalities with an independent assessment of the technical, economic and environmental impacts associated with upgrading their heating services, such as converting coal burning boilers to natural gas, constructing gas pipelines for residential and commercial hook-ups, and rehabilitating aging and inefficient district heating plants. The feasibility study informed municipal decision-makers about the soundness of the proposed upgrade, alternatives and options, and cost implications. The SFZP viewed the feasibility study as an essential first-step in loan application submission, but its costs could not be underwritten by the Fund.

The second type of EAPS involved assisting municipalities in packaging and submitting their loan application. In most cases this meant not gathering any new technical information, but “packaging” the voluminous materials, completing the fund application form, assembling the annexes, etc. This one-on-one support also meant that the EAPS coordinator would often submit the package and then communicate directly with Fund officials. In short, the EAPS coordinator served as a “negotiator” or agent. Traveling to Prague with the loan package in hand was not uncommon. So too was routine discussion of municipal loan package status with Fund officials.

⁷ Investment package is defined by EAPS as “... the preparation of an environmental investment document which provides the necessary information for review, approval by the client, and any source of grant or loan funds” (EAPS Strategic Evaluation, May 1997).

D. Wider Context

EU Accession

At about the same time that EAPS was being implemented, the Czech Republic was intensely looking towards the West. In 1995, for example, it joined the Organization for Economic Cooperation and Development (OECD). Shortly thereafter, high-level agreements were signed with the European Union (EU) on accession. The Czech Republic remains on the “fast track” for (EU) membership – expected as early as 2003. According to many, meeting EU regulations has already had a major impact on environmental policy-making in the Czech Republic as meeting EU standards become the driving force for improving air and water quality.

Gas Subsidization

As part of its national program to improve air pollution, the Czech Government began a campaign of subsidizing the use of natural gas. This was done through price subsidies, which are slowly being removed, and through directives at the SFZP where preferential treatment is given to applications seeking to convert from coal to natural gas. The subsidies and special treatment account for some of the reduction in air pollution.

Industrial Base

Typically environmental quality is strongly influenced by economic activity. During the project period Real Gross Domestic Product and industrial production, rose modestly. Energy consumption remained flat at about 20.9 million tons of oil equivalent from 1995 through 1997. Thus, economic growth did not come as a result of higher energy consumption. This was in part due to the conversion to natural gas discussed above and to the closure of the most inefficient companies and egregious polluters. Following the collapse of the iron curtain, east European economies were hit with difficult realities of competition with the West. The harsh economic realities brought about the closure of numerous inefficient industrial plants. Even as late as 1995, with the economy recovering, business closures were again on the rise. In manufacturing alone 7,685 establishments were closed during the period 1995-1997. For the whole economy the number of closed establishments reached almost 70,000.

E. Project Specifics

The Czech project was USAID’s first EAPS implementation in Central and Eastern Europe. It officially began in March 1995 and ended 28 months later in June 1997 at a total cost of \$1.3 million. EAPS has since closed out of the Czech Republic and Poland, but remains active in four other countries. The Agency’s total EAPS obligation is about \$17 million (November 1999). Soon after EAPS start-up, the project established a field office in Prague with a full-time resident advisor to assist the SFZP. Separate regional EAPS coordinators led the municipally focused technical assistance in each region. Over twenty-three municipalities in Northern Bohemia and Northern Moravia received substantive assistance⁸ from EAPS but only 22 were related to

⁸ The contractor was unable to provide the precise number of municipalities that received assistance. The EAPS Czech Republic Final Report states (1998) “Other projects were screened for assistance and rejected.”

intervention projects. This led to state fund approval of 9 applications (only 8 were later dispersed), and an approval rate of 40.9 percent compared to a Fund wide approval rate of 41.3 percent⁹. Three EAPS training sessions were also held: one in Prague (pilot) and one in each of the two geographic regions.

⁹ Contrary to expectations, EAPS loan approval rates were not found to be different from those of the State Fund (see Annex C for a full discussion).

IV. PROGRAM ELEMENTS

Environmental pollution abatement and management programs typically use one or more of the following five program elements: economic policy reform; environmental regulations and standards; education and awareness campaigns; institution building; and technological change. Although EAPS assistance in the Czech Republic was provided in only four of the five areas (no assistance was needed in environmental regulations and standards), EAPS considered all five areas in developing a strategy to improve environmental conditions. The EAPS strategy focused on strengthening municipal capacity to plan and implement projects that improve environmental quality, especially air quality, and facilitating their applications for financing to a strengthened, better functioning, state environmental fund. The EAPS strategy was to be accomplished within the framework of economic policies that support introducing clean technology and improved environmental quality, coupled with appropriate environmental legislation.

A. Economic Policy Reform

Economic policy can be an important contributor to sound environmental management. Through the establishment of incentives and penalties, economic policy can realign decision-making to more properly take into account the externalities associated with environmental and social costs. It can also help facilitate the financing needed to implement environmental improvement projects. EAPS was not explicitly designed to help reform national economic policy, but it took full advantage of the existing economic principles in place, namely, natural gas pricing policies, use of market-based instruments, and the unavailability of commercial loans for municipal financing. Its implementation introduced and reinforced improved operational procedures at the SFZP.

Pricing. In command and control economies, prices of inputs including energy are often set artificially low leading to excessive consumption per unit of output. In addition to their economic impact, command economies result in high levels of waste and pollution. To combat the problems caused by inappropriate energy prices, the Czech government allowed energy prices to rise slowly towards international market levels. This led to increased energy efficiency and, coupled with a transition to a market based private enterprise industrial base, resulted in improved air quality. Recognizing the lessened environmental damage associated with natural gas relative to coal and the need to encourage greater natural gas use, the Czech government has continued to subsidize natural gas prices. This has led to a shift from coal to natural gas for district and residential heating. EAPS has supported this conversion by targeting municipalities in areas with the highest levels of air pollution (geographical hot spots) that need assistance in obtaining financing to either extend natural gas pipelines to the municipality for residential natural gas conversion or the direct conversion of municipal district heating systems.

Market-Based Instruments. The Czech Republic enforces the CAA through a series of fines and closure orders. Fines are collected for exceeding CAA emission standards and a portion of that fee is provided to the SFZP. Fines for pollution above the permissible emission limits are: SO₂ – \$37/ton; NO_x – \$30/ton; Particulates – \$111/ton; and CO – \$22/ton. The Government also charges a user fee or pollution charge. The Czech Environmental Inspectorate sets the level of the charge. Polluters make fee payments to the tax authority and this is then channeled to the Fund. Pollution

finances are charged for air, wastewater, and solid disposal while user fees are collected on air, water and agricultural land conversion. The Fund relies heavily on these instruments for its revenue. In 1993 the Fund relied on fees and fines for 96% of its revenue as compared to 89% in 1997.

Financing. A major problem facing communities that have decided to carry out projects to improve environmental quality is the availability of financing. Many municipalities do not generate sufficient funds from their annual budgets to pay directly for these projects or other capital projects for that matter. Longer term financing is needed. The municipal bond market is non-existent and commercial banks are only now making loans to municipalities – but at interest rates that are relatively high, about 11%; and for terms which are uncharacteristically short, 5 years or less. In response, the Czech government in 1991 established the Czech State Fund for the Environment (SFZP) under the Ministry of Environment. It was initially capitalized by a transfer from the Czech National Property Fund (6 billion Czech Crowns or \$150 million at current exchange rates) and a U.S. Government grant of approximately \$10 million. Since then, additional funds have been obtained through fines and levies under the CAA and additional transfers from the Property Fund. The SFZP provides grants and subsidized loans to municipalities such that when the grace periods and interest rates are taken into account the overall subsidy is approximately 40% of the project cost.¹⁰ During the early years of operation the subsidy approached 80%.

B. Government Regulation and Standards

Environmental laws, standards and regulations—and the government's capacity and willingness to enforce them—are key to protecting and improving environmental quality. In the Czech Republic, the national government has passed a CAA which has been effective in reducing air pollution from most larger municipalities, industry and electric utility power stations. In 1994, the year following the Lucerne meeting, the Czech Parliament passed legislation establishing the National Air Quality Program (NPOO) to improve air quality from municipal sources such as district heating plants and residential heating. These combustion sources were mainly coal based with little effective control technology to reduce high levels of particulate matter and SO_x emissions. The situation was further exacerbated in the colder months when heating is needed. Climatic inversions trap the pollutants in cities and towns in low-lying valleys creating unhealthy conditions. Legal and regulatory frameworks in support of environmental management were already in place and being enforced, therefore, this kind of EAPS project support was not needed. The Czech national government's interest in EU accession and the associated requirement of maintaining sound pollution abatement and management further reinforces and strengthens an effective environmental regulatory framework.

C. Institution Building

Effective environmental management requires the participation of several institutions: local governments to plan and carry out projects; national level agencies to set policy, establish legal and regulatory frameworks and ensure compliance; public and private sources such as banks and funds to provide financing; and a vibrant private sector to provide technical assistance and

¹⁰ EAP Task Force Secretariat/OECD and EU Phare Programme, 1999.

project construction. EAPS directed its efforts at improving SFZP capabilities and developing municipal capacity to secure needed financing.

SFZP assistance worked to improve transparency by recommending operational changes to enhance communications with municipal grant applicants. It is still claimed that the approval of grants is too often affected by political and personal factors and has less to do with the merits of the environmental upgrade. EAPS put more emphasis on proper procedures for the technical and financial analysis of projects and introduced new ideas such as project financing. EAPS also carried out several studies on loan guarantee programs that would strengthen the Fund's ties with commercial banks, thereby increasing the amount of funding available, reducing risk, and lowering administrative burdens.

EAPS worked with municipalities to improve their ability to obtain loans and grants. Municipalities applying to the Fund must fill out the required form with relatively routine information supported by annexes that provide detailed technical and financial information specific to the proposed project. EAPS emphasis was on helping the municipalities prepare the entire loan package and then follow up with the SFZP to obtain funding. EAPS also provided limited environmental strategy assistance and some stand-alone feasibility studies. At the local level, EAPS assistance was not provided to NGOs or to private sector consulting firms¹¹. Likewise, EAPS did not work with associations of municipalities and mayors in Northern Bohemia and Northern Moravia.

D. Education and Awareness

When properly conceptualized and provided, training can be an effective means to broaden the impact of a technical assistance program. Training others to do for themselves is more sustainable than doing it for them. Likewise, public information and outreach programs involve more people in support of community related activities thus strengthening local government capability. EAPS carried out very limited training. A pilot training course was held in Prague. One session was also held in Northern Bohemia and in Northern Moravia, both aimed at informing municipal officials about SFZP application. The regional sessions were also used to present two computer models: a financing model which municipalities can use to estimate their borrowing limits; and an economic model for valuation of gas pipelines. No assistance was provided for public information programs.

E. Technological Change

New technology and techniques can reduce costs and/or broaden environmental and economic impacts. Waste minimization, by-product recovery, recycling and pollution prevention complement EAPS pollution abatement and treatment efforts. Likewise, improved techniques to package loan applications and analysis of the technical, economic and financial merits of projects and alternatives, result in better environmental priority setting and decision-making. EAPS strengthened the loan package concept and provided analytical support to the SFZP, promoted

¹¹ Project North, the implementing organization for EAPS in Northern Bohemia, is an NGO and benefited from EAPS, however, no other NGOs were directly involved with EAPS.

projects that recovered waste heat and converted combustion sources from coal to natural gas, and developed models for municipal financial analysis and gas pipeline valuation.

V. IMPACT

Environmental programs, although often designed with very different objectives, have impacts that can be put into four broad categories: ***Institutional Impacts*** revolve around the establishment and strengthening of institutions to design, evaluate, undertake, monitor, finance, and enforce environmental activities; ***Environmental Impacts*** help to improve air and water quality, and maintain or enhance biodiversity as well as terrestrial, freshwater, and marine ecosystems, at the national and global level; ***Human Health Impacts*** are associated with preventing disease and promoting healthy living conditions. Air pollution contributes to diseases such as upper respiratory diseases and lung ailments, leading to more respiratory symptom days, hospital admissions, and premature mortality; and, ***Economic Impacts*** include all impacts directly valued in the marketplace and incurred directly by project participants (financial impacts) and those borne by additional parties not captured in the financial analysis, e.g. social and health related costs.

The EAPS project was designed to impact institutions and, through this, to bring about improvements in air pollution in small and medium communities. The team's assessment of the overall project impact using these four dimensions follows:

A. Institutional Impact

EAPS had a mixed impact on Czech institutions. The team found strong evidence that the SFZP was strengthened as a result of participating in EAPS, but found little evidence demonstrating that municipalities or local consulting companies were strengthened.

There are a number of ways that a project can bring about institutional impacts. It can introduce new techniques, train people, provide them with skills, assist them in transferring ideas and technology and it can help to change the way that institutional leaders and visionaries view their world. EAPS attempted to do this at two levels – the SFZP and the municipalities.

At the SFZP, EAPS provided policy and operational advice and hands-on guidance in key operating areas. EAPS prepared nearly a dozen targeted studies designed to help the Fund understand and move toward key policy and operating improvements. These studies ranged from the basics of loan guarantees to detailed analyses of loans¹². Overall, the impacts on the SFZP were very positive.

These studies and the day-to-day assistance provided by the onsite advisor led the Fund to:

1. ***Reduce Subsidies*** – The amount of grants given to applicants was reduced from 80% of project value to 60%, thereby expanding Fund financing capacity, reducing risk and putting more of the onus for better project design and implementation on the borrower. As a result of the subsidy reduction to a more appropriate level, there was a significant impact on the reach or

¹² Principal studies included: Developing a Loan Guarantee Program, Fundamentals of Loan Guarantees, Analysis of Proposed SFZP Guarantee to ECO GAIA, Analysis of Pending Loan Guarantees by the SFZP, A Review of Operations and Procedures of the SFZP, Guidelines for Credit Policy, Guidelines for Credit Procedures, and Guidelines for Credit Analysis.

leverage of the Fund and its financial viability. For example, in 1997 the Fund provided \$57.61 million in grants. Given a grant allocation of 80%, this meant that the Fund could facilitate environmental projects valued at \$72 million¹³. When the grant portion of projects was reduced to 60%, the same amount of Fund money could generate \$96 million in environmental projects.

2. ***Increase Efficiency*** – The Fund’s internal efficiency was increased by making analysis proceed simultaneously in the Technical Evaluation Department (TED) and the Credit Policy Department (CPD), rather than sequentially. In the past this had created major bottlenecks and last-minute decision making, which shortchanged both departments’ analyses. It remains to be seen whether this increased efficiency translates into speedier approvals.
3. ***Set More Realistic Loan Terms*** – The Fund lengthened the loan term from five to ten years. This is more realistic given the nature of the investment and increased the probability that borrowers would repay. Note that such infrastructure loans are generally given for periods of 15 to 25 years in other countries.
4. ***Increase Revenues*** – The Fund started charging an interest rate on all noncommercial loans. As a result of charging 3% interest on noncommercial loans beginning in 1998, Fund revenues have increased an estimated \$739,000¹⁴, or about 0.8% of total revenues.
5. ***Establish Sound Practices*** – The Fund was now able to strengthen its loan guarantee programs with commercial banks. While the EAPS Final Report cites as one of its achievements “initiating a loan guarantee program”, this is not precisely the case¹⁵. The team acknowledges the contribution of EAPS to helping the Fund establish clear guidelines and to avoid making some bad guarantees before a better policy had been adopted. However, the team could not find any evidence to confirm that EAPS actually created the loan guarantee program.
6. ***Develop Screening Criteria*** – The Fund was now able to develop better criteria for screening applications.
7. ***Increase Transparency*** – EAPS was able to increase the general openness and transparency of the Fund. EAPS recommendations led the Fund to publish its procedures, provide applicants more routine access to Fund staff, and provide more feedback to pending Fund applicants when screening and other criteria changed.

EAPS assistance also helped to streamline application review, provide more sound credit analysis, help spread the Fund’s risk and increase the Fund’s reach. It also brought a better sense of acceptance and higher viability to the Fund. Yet, interviews revealed that the Fund was still subject to considerable political influence

¹³ \$57.61 million ÷ 80% = \$72.01 million. \$57.61 million ÷ 60% = \$96.01 million.

¹⁴ This is based on the team’s analysis of loans made during 1998 and assuming an exchange rate of US \$1 = 40 CZK.

¹⁵ It is clear from earlier EAPS reports for example, *Developing a Loan Guarantee Program*, that the Fund had already embarked on a loan guarantee program, but the Fund’s program was not based on sound banking principles.

At the municipal level the impact of EAPS on institutions was less evident. EAPS assisted interventions totaled \$8.9 million. The amount of this that can be attributed directly to EAPS assistance is unclear. Many of the municipalities indicated that they would have been able to obtain grants from the Fund without EAPS assistance. Some were under CAA regulation¹⁶ and were forced to reduce pollution. Others felt that EAPS assistance reduced their costs because EAPS paid for services that the city otherwise would have had to incur. Fewer cited EAPS assistance as the principal reason they received SFZP funding.

B. Environmental Impacts

EAPS environmental impacts were positive. To be sure, EAPS had a direct impact on the physical environment, but that impact was relatively modest at the municipal level compared to what was accomplished at the Fund level.

EAPS had two channels (direct and indirect) for impacting the environment. The first was aimed at the municipal level, mainly through targeted conversion of heating systems from coal to natural gas and targeted conversion of household coal use to gas (direct impact). The second, via technical assistance to the SFZP, was designed to increase the financing capacity and make the Fund more efficient and better able to select worthy projects (indirect impact).

At the municipal level EAPS worked primarily to promote fuel switching from dirtier lignite to natural gas in district heating and residential heating systems. In some instances these interventions brought the municipality into compliance with the CAA. In others, the conversions were the result of citizen pressure for a cleaner environment. Although the CAA does not cover household sources, most interventions involved the residential use of natural gas and waste heat instead for coal.

Table 1 presents the estimated emission improvement as a result of the interventions at the local level¹⁷. Individual reductions are important only insofar as they contribute to improved ambient air quality. EAPS activities had two important environmental impacts. First, they reduced the pollutant load outdoors and thereby had a favorable impact on air quality. Second, when the environmental upgrades addressed residential use, there was a favorable impact on indoor air quality.

¹⁶ The CAA regulates boilers over 5 megawatts.

¹⁷ These are estimates from project feasibility reports based on the characteristics of coal versus lignite and the number of units projected to convert in the project feasibility report. They are not actuals because no direct measurements were made. The team adjusted these numbers to reflect actual project completion. For example, the EAPS final report indicates that if the Chomutov project were completed that there would be an annual reduction of 30 tons of particulate matter. However, since somewhat less than 50% of the units converted to natural gas, the team reduced the pollution reduction estimates by 50 percent. Similar reasoning was applied to other EAPS sites.

Table 1. EAPS Pollution Reductions

Municipalities	Pollutant Reductions (tons/year) ¹⁸		
	PM	SO ₂	NO _x
Bilina	12.1	30.2	4.1
Chomutov	15	11.1	1.4
Krasna Lipa	51	72.8	16.6
Liberec	74	116.1	20.5
Ludgerovice	49	33.1	11.9
Petrovice U Karvine	23	15.5	5.6
Polanka	74.3	32.8	7.2
Svinov	7.6	3.7	0.8
Vratimov	106	178.0	48
TOTALS	412	493	116

Several factors prevented more detailed assessment of the EAPS environmental impact.

- First, baseline environmental data were not available. Only the estimated change in emissions for fully completed interventions was available. In small, isolated towns this is less of a problem for local pollutants such as particulate matter, and assumes that the major source of pollution is represented by the project's activity. Pollutants such as SO₂ and NO_x are subject to transport and, as such, activities undertaken in one area may have little impact on the ambient environmental quality if other locations contributed significantly to local pollution.
- Second, ambient air quality is not measured in many of these localities.
- Third, some of the sites in Northern Moravia were located in airsheds shared with other large industrial towns. The ambient air quality in such EAPS assisted towns is not only a function of their town's pollution but also that of pollution from other towns. The effects related to this commingling of pollution could not be separated given the existing data and lack of baselines.

The problems of quantifying environmental impacts notwithstanding, the team's opinion, based on interviews, site visits, and changes in emissions attributable to switching fuels, is that air quality had improved in EAPS assisted municipalities.

While the impact of EAPS municipal interventions may have had a large impact locally, SO₂ and NO_x are transported over areas spanning several municipalities and are thus of regional concern as well. It is therefore important to consider the regional impact of EAPS municipal interventions. To address this issue, the team compared EAPS assisted reductions to the total that occurred regionally. Data were only available for the Black Triangle part of the Czech Republic roughly corresponding to Northern Bohemia. Table 2 presents reductions in three key air quality

¹⁸ Source: EAPS Czech Republic Final Report 1998. Carbon equivalents and methane are not reported as estimates since they were available for only a small number of interventions.

pollutants over the project period for the Black Triangle part of the Czech Republic and for the EAPS assisted projects in Northern Bohemia. As a percent of emissions avoided, EAPS contribution was very small. This probably reflects the fact that EAPS assistance was targeted to small cities and typically involved extending natural gas pipelines or converting a limited number of residential coal users to natural gas.

Table 2
Tons of Emissions Reduced Annually

	PM	SO2	NOx
EAPS Northern Bohemia	152.1	230.2	42.6
Czech Black Triangle (CBT) ¹⁹	19,000	283,000	7,000
EAPS % of CBT	0.80%	0.08%	0.61%

It should be also noted that there was already a general trend during this period of improved air quality throughout the Czech Republic. This is the result of a number of factors: closure of older industrial facilities, cleaner power plant operations, stringent environmental standards and their enforcement, and the availability of capital from the State Fund for the Environment. Since 1989 PM, SO2, and NOx have fallen by more than 83%, 72% and 74%, respectively, in the CBT²⁰.

EAPS assistance to the SFZP increased the overall investment in environmental projects by reducing the grant allocation as discussed previously. This resulted in approximately \$24 million additional in environmental investments²¹. The precise environmental impact depends clearly on the types of projects financed with the additional funds. Since this information was not available, the Team estimated additional pollution reductions per thousand dollars for all SFZP funded projects (ratios were determined based on data from Table 2). These coefficients for PM, SOx, and NOx were then multiplied by the additional \$24 million credited to EAPS to yield a total additional annual reduction in air pollution of 6400, 7900, and 980 tons of PM, SOx and NOx respectively.²² Of course, this amount is not fixed but is a function of the total amount the Fund provides in grants.

C. Health Impact

There has been a health impact from direct municipal interventions but the impacts are not measurable due to a lack of data. Moreover, they are relatively small compared to other alternatives.²³

Human morbidity and mortality are impacted by changes in ambient air quality. As a result of EAPS' municipal activities, pollution at the source was reduced. Whether or not this had any impact on health depends on numerous factors including the level of pollution, other sources of pollution, local topography and climate, and the type of pollution. Particulate matter under the

¹⁹ Source: EU Phare, Common Report on Air Quality in the Black Triangle Region, 1998.

²⁰ Source: EU Phare, Common Report on Air Quality in the Black Triangle Region, 1998.

²¹ This impact was not cited in the EAPS final report.

²² Calculations of the coefficients are derived from Table 3.

²³ This is clear given that for each dollar of USAID assistance, greater reductions are achieved at the SFZP than at municipalities.

project conditions can be considered to be mostly a local pollutant. In many of the EAPS assisted sites, the team concluded, based on all available evidence, that the majority of particulate matter sources were reduced. The key to health impacts revolves around how this translates into improvements in ambient environment. This data were simply not available. At yet another level, indoor air quality has a profound impact on health. Recent studies in the US indicate that indoor air quality is often likely to have a greater health impact than outdoor air quality. When one considers that many of the interventions had a significant impact on indoor air quality by converting homes from coal to gas, it can be assumed that there were significant improvements in human health as a result of the EAPS project. These health impacts are probably small relative to the overall air quality related health problems in the Czech Republic.

D. Economic Impact

The economic impact of the EAPS project can be measured in two ways – the market place and the economic valuation of impacts that are not directly measured in the market. The former includes the USAID assistance costs as well as the cost of equipment (for example, the new boiler for using gas versus coal or the cost of the pipeline to bring the gas). It also includes the cost of equipment operation and maintenance. The latter impacts are exhibited as individual sources of air pollution are reduced and the ambient environment improves. This improvement in the ambient environment then impacts: human health; monument preservation, aesthetics, animal and plant productivity and reproductive health; general ecosystem impacts; and, global climate change. These impacts, although often not directly valued in the market place, are part of the fuller economic analysis.

Regrettably, the data were not available to conduct such a complete economic benefit-cost analysis. Instead, cost effectiveness was measured. This is justified since emissions reductions were and remain a national objective and would have proceeded regardless of the outcome of a complete benefit-cost analysis. Given that the efforts to reduce emissions were inevitable, the next measure is how effective they were relative to the cost incurred. Table 3 compares the costs of EAPS assisted municipal emissions reductions versus overall SFZP assisted site costs.

Table 3. Cost of Reducing Pollution

	PROJECT UPGRADE COST			
	(U.S. \$1,000)	PM	SO2	NOx
EAPS Interventions	\$8,453²⁴	412.1	493.4	116.2
ALL SFZP Air Projects	\$56,617²⁵	15056	18651	2321
		Tons of pollution reduced per \$1000 (estimate)		
EAPS Interventions		0.049	0.058	0.014
ALL SFZP Air Projects		0.266	0.329	0.041

Table 3 presents the cost of reducing pollution for EAPS assisted interventions compared to all those approved by the Fund. As the data indicate, SFZP projects reduced 0.27, 0.33 and 0.04 tons of PM, SO₂ and NO_x respectively for every \$1,000 of project cost as compared to only 0.05, 0.06 and 0.01 tons of PM, SO₂ and NO_x respectively for EAPS assisted interventions. One possible explanation for part of this big difference is that the average SFZP intervention was larger than the average EAPS intervention and that economies of scale account for some part of the difference. Another possible explanation is that pollution reductions are based on estimates, both at the Fund and EAPS, and that pollution reductions are overestimated to increase the chances of approval. As noted earlier, the applications go through a Fund technical review. For the most part the applications cover similar, simple technologies that are mostly conversion from coal to gas. A simple comparison of the amount of fuel used (coal displaced) can provide a quick estimate of pollution reduction for key pollutants. The Fund review committee is skilled in this basic technique. While the team does not believe this to be a major source of the variation between EAPS and all SFZP interventions, it can account for some portion of the significant difference.

If the question is, that when faced with limited development assistance, where should USAID provide its help to obtain the greatest impact on air quality, the fund is a better choice. As the table above shows, EAPS assisted projects reduced pollution by much less (about 1/5th that of all SFZP projects) for each \$1,000 dollars spent²⁶.

²⁴ This differs from the amount of funds leveraged by the EAPS project as Dolni Poustevna is excluded from these calculations owing to the fact that only costs could be determined, but not pollution reductions.

²⁵ This is the sum of all SFZP approved funds spent on air quality projects plus an assumed leveraged amount. This excludes Dolni Poustevna because the team was unable to determine the pollution reductions.

²⁶ The American Polish Program to reduce Low Emissions in Krakow (Poland), another USAID funded program implemented by the US Department of Energy, was similar to EAPS in that it sought to reduce air pollution caused by local coal provided sources (home stoves and boilers). The program converted over 22,000 homes and over 800 boilers to natural gas. While the program was large in size, the interventions were small in nature. Data analysis on the tons of pollution reduced per \$1,000 produced results comparable to EAPS. Therefore, one should not over interpret the significant pollution reduction disparity between SFZP and EAPS.

At the municipality level EAPS spent \$650,000²⁷ and from that investment it:

- Mobilized a one time \$3.2 million investment in new capital for environmental projects.
- Reduced annual pollution by 412, 493 and 116 tons for PM, SO₂ and NO_x respectively.
- Trained over 22 municipalities in how to complete SFZP loan applications.
- Strengthened the professional ties between 23 municipalities, consultants and the Fund.
- Strengthened one local NGO, the Foundation Project North.
- Created the conditions for another consulting company to work with municipalities in project preparation and packaging.

At the SFZP level, EAPS spent \$750,000 and from that investment it:

- Mobilized an annual increment of \$24 million in environmental projects support by the Fund.
- Reduced annual pollution by 6,400, 7,900 and 980 tons for PM, SO₂ and NO_x respectively based on one year's leveraging.
- Increased the viability of the Fund and reduced its vulnerability.
- Increased public stature of the Fund.
- Increased operating efficiency.

It is the opinion of the team, that USAID's investment generated larger and longer-lasting developmental benefits at the Fund compared to municipalities.

²⁷ Based on budget data in the EAPS Czech Republic Final Report, 1998.

VI. PERFORMANCE

EAPS had varying degrees of impact at the SFZP and municipal level. For the purposes of this impact assessment, performance encompasses effectiveness, sustainability, and replicability. The team assessed performance in three overlapping ways: (1) relative to the final set of four project objectives²⁸, (2) how project funds were allocated and spent against these objectives (also noted in the 1998 EAPS Czech Final Report) and, (3) with the understanding that some of the “final” objectives may have actually emerged late in the project for administrative or other reasons. This impact evaluation is more concerned with developing “lessons learned” than in any strict, formal audit *per se* especially where the objectives may have undergone revisions as EAPS unfolded. Therefore, the final set of EAPS Czech objectives below serves as much as a chapter organizing tool as well as a yardstick for judging what EAPS accomplished.

The final set of EAPS Czech objectives were to:

- **BUILD LOCAL CAPACITY** – Building institutional capacity in environmental, technical, and financial project evaluation and in packaging environmental investments²⁹
- **FINANCE ENVIRONMENTAL PROJECTS** – Facilitating financing of high-priority pollution prevention and abatement projects that enhance the performance and quality of municipal environmental services
- **STRENGTHEN ENVIRONMENTAL FUND** – Ensuring the sustainability of environmental initiatives by improving the ability of domestic funding sources, primarily the State Fund for the Environment (SFZP), to allocate resources
- **STRENGTHEN LOCAL GOVERNMENT** – Increasing the role of local governments in environmental decisions affecting their communities

A. Effectiveness

Effectiveness is defined as a measure of how well the intended development assistance met the stated project objectives.

SFZP - Overview

Overall institutional capacity was significantly strengthened at the SFZP. The Fund reported implementing a majority of the EAPS operational recommendations for financial improvement. This was confirmed by a 1998 external evaluation of the Fund by the Organization for Economic

²⁸ See Annex A for a fuller discussion of EAPS objectives, which were dropped, refined, or otherwise modified throughout the life of the contract.

²⁹ As understood in this assessment, the terms are defined as follows: Environmental Evaluation-- the environmental impact of a specific activity, namely the reductions of pollutants; Technical Evaluation -- whether the technological change proposed is best suited to the desired environmental outcome taking into account cost as well as the extent to which necessary project documentation has been provided to justify the upgrade; Financial Evaluation -- refers to the credit-worthiness of the applicant and the suitability of the package of financial assistance.

Co-Operation and Development³⁰. Additionally, the SFZP reported that working closely with the EAPS resident advisor greatly enhanced its overall institutional credibility. However, communication between the SFZP and municipalities and overall application processing time could benefit from additional improvements. The key findings are examined below in the context of the program objectives.

Building institutional capacity in environmental, technical, and financial project evaluation and in packaging environmental investments

EAPS assistance aimed at strengthening financial review of applications was reported to have been very useful and has been incorporated into daily Fund operations. Previously, the Fund's Technical Evaluation Division (TED) would perform a complete analysis of the project's potential for pollution reduction first, and only then would the Credit Policy Division (CPD) be provided the materials it needed to evaluate applicant credit worthiness. This often resulted in the CPD having insufficient time to properly review the application prior to making recommendations to the Fund's decision-making council. To exacerbate this delay, by the time CPD received the loan materials, the application information was often outdated and more timely data was needed, further delaying loan processing and final approval.

EAPS suggested parallel processing by TED and the CPD. That is, as soon as TED had determined that an application had the potential to reduce pollution, it was to provide the application to CPD with a "ball-park" estimate of necessary financing. The SFZP reported that it accepted this parallel processing recommendation, resulting in faster processing of loan applications.³¹ Furthermore, faster processing meant that the fund had the potential to review more applications in a given time period. EAPS assistance to the Fund resulted in significant operational improvements and improved financial project evaluations. The assessment team could not find any evidence that EAPS had provided the fund with technical and environmental loan application assistance however. While the Fund is able to support more environmental investments, this does not always mean that the quality of investments has improved. For example, the team found some anecdotal evidence that the Fund does not consistently conduct economic analyses but routinely does financial analyses. As an agent of government environmental policy, the Fund may need to use both kinds of analyses.

Ensuring the sustainability of environmental initiatives by improving the ability of domestic funding sources, primarily the State Fund for the Environment (SFZP), to allocate resources

EAPS was very successful in meeting this objective. The Fund implemented recommendations regarding decreasing the grant portion of total project costs, using cash-flow management software, lowering interest rate subsidies, charging interest on municipal loans and improving the SFZP's loan guarantee program. These all enhanced the Funds' effectiveness.

SFZP reported that it followed EAPS advice to decrease the grant portion of total project cost from 80% to 60% and reported this in their annual report. Prior to EAPS assistance, the SFZP

³⁰ EAP Task Force Secretariat/OECD and EU Phare Programme "Review of the Czech State Environmental Fund", 1998.

³¹ The EAP Task Force reached a similar conclusion.

was providing a large portion of project costs as grants. The Fund incorporated EAPS advice to lower the grant fraction of total project cost. This allowed the SFZP to support more projects, thus increasing the potential for environmental impacts.³²

SFZP reported that EAPS assistance has improved its loan guarantee program. Loan guarantees typically involve “insuring” a loan given by a third party, generally a commercial bank rather than making the loan directly. The guarantee concept is used as a means of attracting commercial loans for municipalities by reducing the third party’s risk. However, in some of its early loan guarantees, SFZP was not only providing loans for part of the cost of municipal environmental projects, but the Fund was also guaranteeing another loan for the same project. By providing a loan as well as a loan guarantee, the Fund was defeating the purpose of risk diversification. With EAPS support, SFZP began to halt this practice. The Fund is also moving towards encouraging loan guarantees as a way to use relatively smaller amounts of its own capital to prompt commercial banks to lend larger sums.

Facilitating financing of high-priority pollution prevention and abatement projects that enhance the performance and quality of municipal environmental services.

This is discussed later in the report.

General Institutional Strengthening

Senior SFZP staff stated that the most important contribution EAPS made to their institution was to imbue it with greater recognition and prestige within the national administration. By working directly with the fund, EAPS contributed greatly to its recognition as a quasi-independent body within the Ministry of the Environment. A Central and Eastern Europe (CEE) wide conference organized under the auspices of EAPS further enhanced the Fund’s credibility. The conference showcased the SFZP to a CEE-wide audience of senior environmental fund personnel, and provided SFZP with opportunities to network with other funds. The many operational improvements recommended, the provision of a consultant that operated in-house, and the facilitation of a CEE network of such funds, all greatly enhanced the institutional viability and credibility of the SFZP. However, municipalities did not see these improvements at the Fund translated into a significant improvement in the provision of services.

Most EAPS assisted municipalities indicated that they now had better access to SFZP officials. However difficulties remained when checking on the status of their applications with the Fund. Also, municipalities indicated that the period of time between submitting an application and receiving a response had not yet decreased noticeably.

MUNICIPALITIES - Overview

EAPS municipal assistance to prepare grant applications did not help as much as originally anticipated. That is, many municipalities reported that EAPS assistance was not critical to their securing SFZP financing. Financing of feasibility studies and organizing training sessions did not

³² As discussed in the previous chapter, this increased the total value of projects funded annually from \$72 to \$96 million, or by 33%.

significantly improve their ability to carry out technical, financial, and environmental project evaluations. However, municipalities greatly valued EAPS' facilitation role, which provided them with greater access to and understanding of the SFZP. There was little evidence of EAPS increasing the role of local governments in making environmental decisions.

Building institutional capacity in environmental, technical, and financial project evaluation and in packaging environmental investments.

The assessment team determined that EAPS assistance with loan application preparation was not very effective. Loan approval rates are presented in the EAPS Final Report as evidence that this objective was successfully achieved. However, loan approval rates are not an effective measure of success in building institutional capacity for a variety of reasons (see Annex D). Assuming that approval rates are appropriate measures, based on field verification, EAPS assisted projects had an approval rate of 40.9 percent compared to a Fund-wide approval rate of 41.3 percent³³ – not a noteworthy distinction.

Municipality staff interviewed by the evaluation team generally prepared loan applications independently or with EAPS assistance. In the former case, EAPS contributed by facilitating negotiations with the SFZP or paying for a feasibility study. In the latter, EAPS staff prepared the application themselves, and did not work with municipal staff as partners in the application process. Thus, municipal staff did not have the opportunity through EAPS to learn how to evaluate or package the investment. A notable exception was Petrovice U Karvine, where EAPS and municipal staff worked collaboratively. Municipal staff at this one site benefited greatly from this true partnership; three of their four subsequent applications proved successful.

Municipalities reported that they neither benefited from nor had much interest in EAPS-organized training sessions. Most municipalities felt that factors other than loan application quality, such as personal connections, were more critical to securing loan approval. As such, it was quite natural that they did not attach much value to attending project packaging training. Additionally, this was ineffective because EAPS, rather than the Fund staff, presented the training. Training presented by the Fund would likely be more attractive to the municipalities.

Increasing the role of local governments in environmental decisions affecting their communities

The assessment team found mixed evidence from EAPS assistance in this regard. Many of the municipalities indicated that their role in local environmental decision-making was much the same as it has been when EAPS started. Only a few municipal officials, notably those in Ludgerovice and Petrovice U Karvine, indicated that their environmental consciousness had been raised by this project.

General institutional strengthening

Municipalities greatly valued the EAPS facilitation role, which provided them with greater access to the SFZP. Smaller municipalities often lack good access to, or properly understand

³³ The approval rates were computed as follows: Twenty-two intervention projects received EAPS assistance, of which nine were approved for funding, or 40.9 percent.

state institutions, which is not surprising in a highly centralized country like the Czech Republic. This is particularly true about a new state institution such as the SFZP.

The majority of EAPS assisted municipalities indicated that one of the major project benefits was building relations between municipal staff and the Fund. By way of illustration, Vratimov was a municipality that considered the facilitation role played by the program to be important even though they have still not received any funds from the SFZP.³⁴ EAPS assistance was viewed as useful in clearing up misconceptions about eligibility criteria, approval processes, and the like, but only for a handful of EAPS assisted municipalities.

B. Sustainability

Sustainability is defined as the degree to which a program continues to provide benefits beyond the end of development assistance.

SFZP

Financial sustainability

By reducing the grant portion of total project costs from 80 to 60%, the Fund was able to better preserve its financial resources, thus contributing towards its long-term financial sustainability. By helping to improve the SFZP loan guarantees program, EAPS assistance helped make the fund a more stable financial institution. Charging interest on non-commercial loans also increased the Fund's revenue stream, thus further strengthening its financial situation.

Institutional sustainability

EAPS assistance changed a key Fund operational procedure such that the TED and CPD now process applications simultaneously rather than sequentially. Fund officials recognized that they functioned better with this change in their operations, and are thus likely to maintain the parallel processing. The TED and CPD work together in a more efficient manner than before and are likely to continue to do so. Through working closely with the Fund, EAPS increased its credibility – critical to ensuring the long-term viability of what was still a relatively new institution. This institutional strengthening of the SFZP bodes well for the future of this national fund.

MUNICIPALITIES

Institutional capacity in packaging environmental investments

³⁴ Vratimov was a unique municipality in that it did not involve coal-to-gas conversion but the use of waste heat from a steel mill. A new joint venture, Teplo-Vratimov was formed between the Nova Hut steel mill and the town of Vratimov. The SFZP was reluctant to fund what was a very different project, and EAPs assistance proved helpful in pushing the process along; facilitating negotiations with the fund on a very challenging project package.

EAPS assistance to municipalities preparing loan applications is likely to have little long-term impact. EAPS helped municipalities to different degrees with their SFZP applications. Depending upon the skills available at the municipality, this assistance took a variety of forms, as follows:

- working with municipal staff on the application and enclosures
- supervising the flow of necessary documents
- completing the enclosures
- fully preparing the application and the enclosures

When EAPS and municipal staff worked together on loan applications, the technical assistance could have had more of a lasting impact on the municipalities' capacity for future application preparation than it did. In only a few cases did EAPS and municipal staff actually work together on the applications and the latter benefited greatly from this "learning by doing" technical assistance. However, in the majority of cases where EAPS staff "helped" with the application, they did it independently, and therefore municipal staff had less of an opportunity to develop skills for future applications.

Petrovice u Karvine is illustrative of the importance of working closely with municipal staff. Here, municipal staff applied the skills they learned during EAPS assistance to future loan applications to EU-Phare and the Ministry of Local Development. The municipality was successful in 3 of the 4 subsequent applications. Unfortunately, this was not as common in other EAPS-assisted municipalities.

Building institutional capacity in technical, financial, and environmental project evaluation.

Feasibility studies financed by EAPS did not build substantial municipal capacity in technical, financial, and environmental project evaluation. However, such assistance did help some consultants who carried out the studies. Financing municipal feasibility studies neither enhances the ability of the municipality to conduct their own studies nor does it increase the chances that the municipality will be able to obtain financing for future studies. An alternative strategy might have been to work with the SFZP and encourage it to provide loans for feasibility studies, with the understanding that the loan could be included in the overall project cost should the project be financed by the Fund – otherwise the loan could be paid back at below-market rates of interest.

By providing consultants with an opportunity to work with a number of municipalities, the program helped them showcase their services. In addition, the consultants themselves recognized the growing need for this sort of consulting.³⁵

General institutional strengthening

³⁵ In former centrally planned economies, local administrations are still getting used to the idea that they themselves now have the power to identify problems, compare possible solutions, and implement decisions. This is very different from the situation under the previous regime where their role was to implement solutions passed on from higher level authorities.

EAPS facilitated improved relationships between municipalities and the SFZP, which have the potential for long-term benefit. This depends upon whether the municipalities develop new environmental projects and apply to the Fund for financing. For example, the relationship may help the municipalities access the appropriate Fund personnel to clarify a loan detail or inquire about a new application. For those municipalities that do not need to develop new projects, especially smaller ones, the long-term value of the relationship developed with the Fund is less useful.

C. Replicability

Replicability is defined as to whether the assistance provided to target municipalities has spread to other municipalities. The issue of replicability does not apply at the Fund level because while there are thousands of municipalities in the Czech Republic, there is only one state environmental fund.

Project evaluation and packaging

The assessment team could find no evidence for EAPS replication at other municipalities. This did not appear to be an explicit EAPS strategy. When the team observed “replication” it was from municipalities sharing general information, and could not be directly linked to any EAPS activity. It is interesting to note that cooperation between municipalities was extremely limited in the Northern Bohemian sites, but quite common in Northern Moravia. Especially notable in this regard is Ludgerovice, which belongs to an association of towns and villages from former Prussian areas, centered around Hlucin. Through regular meetings, these municipalities exchanged information. EAPS assistance to this one municipality was thus replicated, but in general, the absence of an explicit replicability strategy meant that there was little or no spillover of skills or expertise.

General institutional strengthening

EAPS strengthened municipalities in the long-term by facilitating relations with the SFZP and other municipalities in the EAPS program. For municipalities that are geographically and politically isolated from Prague, the program’s facilitation of municipality-SFZP relations was positive. Through their involvement with EAPS, municipal staff came into contact with other municipalities involved with the program, as well as SFZP and Ministry of Environment personnel. This informal network may eventually be of great value to EAPS assisted municipalities as they seek to benefit from the experiences of their counterparts.

VII. EAPS POLAND

A. BACKGROUND

The focus of the evaluation has so far been on EAPS Czech Republic – the Agency’s first EAPS project. Nonetheless, there was considerable interest in obtaining added field information about EAPS in neighboring Poland where the project has also closed out. EAPS began somewhat later in Poland than in the Czech Republic and lasted somewhat longer. The budget for EAPS Poland was \$2.75 million – twice that spent in the Czech Republic. The overall EAPS approach was quite similar, namely, to strengthen domestic environmental funds and to help municipalities get loans for environmental upgrades. Both countries made a similar politico-economic transition, both faced a legacy of air pollution problems, and both still depend heavily on coal for power generation. In fact, the largest basin of brown coal in Europe is found in Polish Silesia, which, like Northern Bohemia in the Czech Republic, makes up part of the notorious “Black Triangle”.

Another reason to obtain additional information from Poland was that the EAPS Midterm Evaluation (1997)³⁶ found that Poland’s National Fund for Environment Protection and Water Management, and regional environmental funds, were playing a much more catalytic role than the Czech State Environmental Fund. In effect, things looked more promising in Poland for financing environmental projects according to the Midterm Report. With this in mind, the assessment team conducted a limited number of site visits in Poland – focused mainly at the regional fund level.

In Poland, in contrast to the Czech Republic, there are four separate categories of domestic environmental funds--not just a single state fund. At the national level in Poland, there is the National Fund for Environmental Protection and Water Management³⁷. At the provincial and regional level there are 49 regional or voidvodal funds³⁸. Just below these voidvodal funds are the newly emerging powiat funds and, at the municipal levels, there are more than 2,000 local environmental “funds”. Both the national and voidvodal funds have legal status and independently approve applications for financing – subject to review by their board of directors. The powiat and local environmental “funds” function solely as part of the powiat and municipal (gminas) governmental structure and have no legal fund status. Compared to the Czech Republic, there are simply many more Polish environmental funds at various administrative levels and the funds also appear to be better capitalized. Like the Czech State National Fund, the Polish funds typically use grants as a way of financing environmental upgrades but the Polish funds are not legally permitted to use loan guarantees (as in the Czech Republic)³⁹.

The EAPS Poland Final Report (1998)⁴⁰ describes technical support to 6 voidvodal funds and the National Fund. EAPS assistance ranged from developing a project appraisal/selection manual, to

³⁶ EAPS Strategic Evaluation, Bureau for Europe and Eurasia, USAID, 1997.

³⁷ The Fund was established in 1989 by Parliament and its 1995 expenditures were \$425 million. The Fund works closely with the Environmental Protection Bank—a full service commercial bank making environmental and other loans.

³⁸ In 1999 these were consolidated into 17 voidvodal funds.

³⁹ The Market for Financing of Environmental Investments Projects in Poland, Polish Ministry of Environmental, Natural Resources and Forestry, 1997.

⁴⁰ EAPS Poland Final Report, Chemonics International Inc., 1998.

using a cash-flow-planning model, to helping the funds assess and monitor environmental impact. The team visited two of the largest and most active funds—the Krakow and Katowice Voidvodal Funds—and met with four EAPS implementers and fund applicants in greater Krakow and in Gliwice⁴¹. A major thrust of EAPS technical assistance in Krakow focused on converting heating sources from coal to gas – some 45 individual projects⁴² in the historic old town area received support. EAPS assistance to cities applying to the Katowice Fund was designed to support district-heating plants – as in Gliwice for example. Findings from the Krakow and Katowice Funds were found to be very valuable, but should only be seen as anecdotal given that only two voidvodal funds were interviewed. Therefore, caution must be exercised in generalizing to EAPS impacts on other Polish environmental funds and on other fund applicants.

B. FINDINGS

Krakow Fund

The Krakow Voidvodal fund, situated in the historic quarter of Krakow, is now almost five years old and has benefited significantly from EAPS assistance. Prior to EAPS, the Fund had in place an application screening procedures that weighed both ecological and financial project merits, but relied less on actual (i.e., quantifiable) pollution measures such as SOx, NOx and particulate matter. With EAPS assistance they were able to better quantify environmental impacts associated with each proposed upgrade, using a computerized model provided by an EAPS implementer⁴³. As a result, the Fund reported it was much better able to prioritize applications and award grants. This cash-flow model was later adopted by other voidvodal funds and the National Fund, with the Krakow Fund taking the lead to help introduce and apply the model.

The Krakow Fund also reported a significantly better application approval rate from municipalities receiving EAPS investment packaging assistance (almost 90%), compared to non-EAPS assisted applications (67%). Quantifying environmental impacts had another positive effect on the Fund. Prior to EAPS, there was a tendency for the Fund’s Board to become more involved in grant decision-making. After EAPS support, the Board relied much more heavily on the recommendations of Fund financial and technical specialists, thus making the final grant decision-making less subject to non-merit based influences, and thereby reinforcing Fund transparency. The assessment teams’ impression was that the Krakow Fund benefited from EAPS assistance and was able to transfer what it learned to help other funds. It must be said that the Fund already had a well-defined set of technical procedures for assessing credit worthiness in place prior to EAPS assistance and made no mention of using the EAPS cash flow model. The Fund was lacking precision in estimating environmental impacts however and EAPS appeared to fill that need as well as enabled the Fund to transfer skills to others.

⁴¹ Biuro Rozwoju Krakowa (BRK), CityProf, PEC District Heating Company and Raciechowice Municipality.

⁴² The exact number of sites is not entirely clear from project documentation.

⁴³ USAID’s predecessor project—Central and Eastern Europe Environmental Economic Policy Project (C4EP)—and several of its staff also worked with many of these Polish funds. Naturally, it was difficult for interviewees to tease out precisely what assistance they received from C4EP or EAPS, especially when the same individuals worked on both projects or provided like assistance as was the case, for example, with the cash-flow model.

The assessment team also contacted one of the major EAPS implementers—the Polish engineering firm, Biuro Rozwoju Krakowa S.A. (BRK)—to better understand what kind of consulting support they received. In the process of that discussion the team learned more about the much larger, longer term USAID-financed American-Polish Program to Reduce Low Emissions, in Krakow. This 10-year program, still ongoing, began in 1991 and was initially funded by USAID with \$20 million, and implemented by the Brookhaven National Laboratories of the U.S. Department of Energy (DOE) and BRK. Project progress has been impressive, with approximately 800 of 1,133 boiler houses converted to natural gas and 22% of the 100,000 residential stoves converted to electric heating. EAPS funded technical studies for 82 of the 800 boiler conversions. BRK indicated that they were aware of EAPS technical assistance to the Krakow Fund to improve application procedures and address the problem of insufficient project financing. BRK did not directly benefit from any of the EAPS technical assistance workshops. From a development perspective the technical assistance provided by EAPS to the Krakow Fund apparently was useful, according to BRK, with the money spent on technical studies serving as a minor contributor to the much larger DOE program.

To get a better understanding of how regional fund procedures are viewed by applicants—and not necessarily EAPS-assisted ones—the assessment team visited the municipality of Raciechowice just outside Krakow proper.⁴⁴ Raciechowice is a rural community of 6,000 permanent inhabitants approximately 40 kilometers south of Krakow. The town depends on agriculture with 63% of the land devoted to this purpose. Due to its beauty and proximity to Krakow, it has become popular as a location for vacation and weekend homes. The town has worked with the Krakow Fund since 1994 and has obtained loans for drainage, sewerage and energy projects. Although EAPS did not provide any assistance, the town has had support from another USAID project, the Local Government Partnership Program (LGPP).

The overall team impression was that the town has found that sound ecological management pays off. They have won ecological competitions sponsored by the Krakow Fund being designated an “Ecological Community.” Raciechowice has an exclusive contract with Carrefour, a European food firm, to supply apples recognizing the community’s use of integrated pest management practices that minimize pesticides use. They are presently establishing a solid waste separation and recycling program. The municipality stresses public awareness starting with the children at the schools. Their relationship with the Krakow Fund is excellent with the fund providing technical guidance in preparation of specific loan applications and periodic training sessions. Accurate information from the Fund on loan applications is provided by phone or by visit. Raciechowice also claims to have excellent relationships with nearby municipalities resulting in good information sharing and mutual support.

⁴⁴ The team visit had two other purposes. The first, to compare how a state-level environmental fund, like the SFZP in the Czech Republic, provides applicant services relative to regional ones in Poland. The second was to explore the synergy between EAPS and LGPP.

Katowice Fund

The Katowice or Silesia Fund serves an unusual voidvod in that the region is highly urbanized and industrialized.⁴⁵ One-fifth of national industry is located in the Katowice voidvod. A variety of projects are considered for funding, including environmental education (notably Earth Day activities), environmental monitoring and control systems, residential and industrial waste management, forest protection, flood prevention, and projects that reduce air, water, and noise pollution. EAPS worked with the fund in a number of ways.

The Katowice Fund was one of the regional funds that cooperated with EAPS in the development of a computerized cash flow planning model and another model to collect and confirm data on the environmental impacts of projects. The team did not find any evidence to confirm the usefulness of the cash flow planning model, but did find that another model to consistently quantify the environmental impacts was being used. EAPS also helped the Katowice Fund showcase its competencies and increase its outreach through Central and Eastern Europe (CEE) fund training and workshops for gminas. The Fund continues to hold these workshops, thus continuing to provide valuable loan application guidance to gminas. However, the fund stressed that EAPS assistance really benefited the municipalities more by helping to improve the quality of their applications submitted, and only indirectly impacted the Fund. Several key fund personnel emphasized that the quality of loan applications from EAPS assisted gminas was far superior to those prior to EAPS assistance, and that this made their job of evaluating applications much easier.

A client perspective of the Fund was provided by the PEC District Heating Company (Gliwice). The gmina of Gliwice owns both the heating plant and the heating distribution system – unusual for large heating plants (PEC is a 360 MW plant). PEC reported that it had a good working relationship with the Katowice Fund, having worked with them for six years. They reported that, although relations with the fund are good, this does not translate into their being able to secure fund financing easily. The application form itself was regarded as cumbersome and the process very involved. When rejected, they did not always receive an explanation why. This does not necessarily indicate that the Fund was not working well, in fact it may indicate the opposite.

It must be stressed that PEC was pleased with its general relations with the fund, but regretted that it was no longer so easy to secure financing. Noting that PEC is a large, profit making enterprise, the fact that their access to fund resources was regarded as more difficult, may be an indication that the fund is, quite properly, directing its resources to gminas and other applicants that have less access to commercial funding sources. This is confirmed by the fact that PEC receives almost 80% of its external financing from commercial banks, as opposed to only 20% from the voidvodship fund.

⁴⁵ The full title of the fund is “The Voidvodship Fund for Environmental Protection and Water Management,” abbreviated WFOSiGW in Polish.

C. SUMMARY

The investment climate for environmental upgrades in Poland appears to be much more robust than in the Czech Republic, and quite naturally the overall success of environmental financing appears to be much higher. The demand for environmental financing has been growing since the 1990s and the role of domestic environmental funds has increased proportionately. In such a dynamic market, it is hard to say with any precision what role EAPS Poland played in strengthening funds and facilitating investment packaging without a more detailed, full-scale study. At the same time the assessment team came away with the strong impression that EAPS Poland had made major accomplishments. The voidvodal and other fund managers acknowledged receiving very helpful support from EAPS and could cite specific contributions like training and selected model use. More importantly they were able to put that technical assistance to use by helping to train other funds. When technical assistance was of only limited use, the Funds still reported that EAPS brought about a certain measure of credibility to the funds. Compared to the Czech Republic, fund application procedures in Poland appear to be better documented, more widely communicated, and participant outreach considered routine, rather than rare. In short, the funds appear to go out of their way to assist applicants package their investments--but do not do it for them.

The EAPS impact on cultivating a cadre of consulting professionals to assist municipalities package their investments was less clear. One implementer reported that EAPS assistance helped his company accumulate skills to better develop the “financial side” of project implementation and allowed him to introduce the “design/build” concept for customers. Another major implementer could not identify any special or unique skills acquired with EAPS support. Technical staff from a major district heating plant advised the team that a rather large base of consulting firms, focusing on the legal, economic, and financial aspects of investment packaging, had existed for some time.

On the client or applicant side, there appears to be more satisfaction with environmental investment packaging in Poland than in the Czech Republic, but this seems to be more a function of historically better fund communication and outreach, rather than directly attributable to the EAPS intervention. EAPS support to the Polish funds, like in the Czech Republic, may be a better development strategy if one has to choose between underwriting investment packaging at the municipal level or providing technical assistance at the fund level. Finally, the assessment team left with the strong impression that regional funds in Poland have some definite advantages over a national fund. The regional funds appear to be much more flexible, are closer to the environmental stresses, and can more easily provide technical support. In short, regional funds are closer to their “customer base” and can provide better service. The international donor community and many partner organizations have long advocated a more decentralized approach to government services, and Polish regional environmental funds would seem to fit that model well.

VIII. LESSONS LEARNED

USAID's Environmental Action Programme (EAPS) in the Czech Republic was a \$1.3 million, 28-month effort to strengthen the State Environmental Fund and lend support to small municipalities to prepare an investment package to upgrade their environmental services. A long-term residential advisor was placed at the Fund and technical assistance was provided to 22 municipalities to help them develop loan applications for the Fund. EAPS provided assistance to municipalities totaling \$650,000 to undertake design and cost feasibility studies, package loans, and conduct training and workshops. The interventions undertaken as a result of this assistance amounted to \$8,453,000 – a ratio of 1:13. This ratio only includes municipalities that eventually received loans from the Fund and made the environmental upgrades, reduced air pollution, and improved citizen's health. At the same time, project effectiveness, replication and sustainability could have been better. The lessons learned from this assessment are summarized below:

A. Environmental regulations and meaningful enforcement are necessary first steps for improving air quality.

Often, one of the first questions faced by program designers is whether a regulatory framework already exists. When EAPS began in the Czech Republic in March 1995, the CAA had been in existence for several years. The CAA required industries and municipalities generating more than 5 megawatts of electricity to reduce emissions according to a well-defined compliance schedule. Failure to comply meant swift and harsh penalties, fees, and ultimately cease and desist orders. The outcome for non-compliance was clear and the consequences well communicated. Following the transition from a centrally planned economy, the Czech government acted decisively to avert further environmental degradation. Many polluting industries were shut down and larger municipalities that were polluting the air, began to take action. Smaller municipalities were less well equipped financially and technically to respond but aware of the consequences too.

When questioned as why they undertook environmental upgrades, the overwhelming number of cities revealed three reasons. The driving force for many municipalities to take action was the CAA. Citizen complaints about poor air quality and high costs associated with inefficient, outdated heating operations were also cited as important reasons. For those municipalities regulated by the CAA, compliance was the paramount driving force. Progress switching from coal to gas and the pace of district heating improvements would have been much slower, if at all, without the CAA. Passing laws and properly enforcing them was a necessary first step to cleaner air quality in the Czech Republic. EAPS implementation was well timed. Its effectiveness would have been seriously compromised had it preceded the CAA enactment and enforcement. Like the CAA, efforts to comply with EU air standards have already had a salutary effect on air quality in the Czech Republic. In summary, the existence of environmental regulations, with significant penalties for exceeding pollution standards and strict enforcement are necessary conditions for improving air quality.

B. Domestic environmental Funds can be vital finance sources for municipal projects in transition countries.

The greatest impact of the EAPS project was at the national environmental Fund, through the work of a resident advisor and related technical assistance studies, which led to improved procedures and the adoption of policies to reduce subsidies and improve loan guarantees. Notwithstanding the increased participation of other sources of project financing through loan guarantees and interest rate subsidies to commercial banks, Funds are still needed because they play the additional role of being a policy instrument to implement projects that take into account environmental and social priorities. Even with improved technical and financial analytical procedures, the Fund will be handicapped if its approval of financing is affected by political factors, if it is perceived as not transparent and open, or its communication with municipalities is inadequate. These problems tend to be more manageable for sub-national (i.e., regional funds) compared to national level funds based on assessment findings from Poland. Regional funds may play a much more important role than national ones.

C. Environmental investment evaluation and packaging can be an effective tool, but not under all conditions and measuring its success can be difficult

One of the major impediments to increased environmental management has been the unavailability and high cost of funds for environmental upgrades, especially by municipalities. On the other side of the issue the capability of municipal project sponsors to provide investment information in a form that banks or environmental funds can use to make lending decisions is important. EAPS provided assistance and training⁴⁶ to municipalities in environmental, technical and financial evaluation of projects and loan packaging. According to EAPS project personnel and to those municipalities interviewed, this technical assistance and training was of little interest or use because: (a) larger municipalities claimed they already had the expertise, (b) most municipalities believed that the Fund's approval process was arbitrary and political, so education or better packaging did not necessarily improve the chances of success, and (c) smaller municipalities were not given sufficient hands-on experience to learn the process themselves nor do they expect to have sufficient opportunities to put this to practice in the near future. Thus, EAPS' training in project packaging was undermined both by its targeting and "hands-off" nature, but also significantly so by conditions that made any assistance to municipalities of limited use.

The effectiveness of project packaging (loan application) assistance cannot be easily deduced from loan approval rates in situations where loan approval depends on factors beyond the quality of the loan application. In cases where environmental funds receive more applications than they can fund, when an application arrives for consideration can be just as, if not more, important than its quality. Similarly, other factors such as the number of loans/grants already disbursed for a given geographical area, differential priorities for technical solutions, and political factors, can all be important reasons for loan approval or rejection. Other ways to estimate the effectiveness

⁴⁶ Notwithstanding these reservations, training provided by the Funds themselves is likely to be of greater interest to municipalities.

of project packaging assistance include the success of future applications and whether those receiving the assistance feel that they would have obtained the loan without the assistance.

D. Replication at municipal level can work, but it requires an up-front strategy that takes into account the local context.

Ensuring the replication of technical assistance at the municipal level can be accomplished in one of two ways. One way is to design assistance through developing high quality assistance products such as manuals on how to prepare loan applications, examples of successful applications, specific templates for different kinds of projects, i.e., coal-to-gas conversion of boilers, district heating, wastewater, etc. The distribution of these assistance products beyond the target municipalities can lead to more replication. Another way to increase replication is to target groups of municipalities such as municipal associations who can spread the word. Combining these two approaches is also possible, such as developing high quality assistance products and disseminating them through municipal associations. Unless an explicit replication strategy is planned in advance, and implemented, the likelihood of “spread” to other entities will remain quite low.

E. In order for environmental funds to have the greatest societal impact, their dual purpose of providing financing and subsidizing socially desirable environmental investments must be emphasized.

Technical assistance often focuses on the financing aspects of the Fund by addressing credit policies, risk diversification, financial analysis, and operating procedures. These are indeed worthy areas to target. However, at the same time, environmental funds are a means of subsidizing socially desirable environmental investments. Since many of the benefits of mitigating environmental damage or managing resources properly do not accrue to those that incur the costs, the rate of return on these activities is often below that which is needed in a market economy and less investment is undertaken than is socially desirable. In-depth interviews with a broad range of participants during the course of the assessment in the Czech Republic and Poland confirmed that government intervention is necessary to increase societal welfare. This aspect of the Fund’s role is often overlooked and should be considered and strengthened in Fund policy and operations. Both project screening and the allocation of subsidies offer a perfect venue for strengthening societal welfare as an aspect of the Fund’s purpose.

For example, at the Czech Fund the cost per unit of pollution abated is one screening technique. The problem arises because the fund uses the subsidized price of natural gas rather than the cost to the economy. This could result in the exclusion of some projects such as waste heat to energy where the cost per unit of pollution reduced may be higher than the subsidized cost of natural gas. However, this comparison is inaccurate because it does not include the environmental premium of using a waste for heat versus burning natural gas. Nor does it consider the cost to the country of using subsidized natural gas versus the waste heat.

ANNEX A – EAPS OBJECTIVES

EAPS objectives were dropped, refined, or otherwise modified throughout the life of the contract from the issuance of USAID’s 1993 Request for Proposal (RFP), the contractor’s 1994 Technical Proposal, when work actually began in the Czech Republic (March 1995) and as reflected in the 1996-1997 Scope of Work. In some cases, initial objectives were dropped to meet fast-paced, changing regional events in Eastern and Central Europe. In other cases administrative changes in Washington or with field missions modified the project’s scope. For example, the overall objective to purchase environmental equipment cited in the RFP and Technical Proposal was later dropped. In another case the objective to explicitly strengthen local government (“More effective, Responsive and Accountable Local Government) cited in the 1996-1997 Work Plans, appears to be a much later addition to better harmonize the EAPS project with the Czech Missions’ Strategic Objective.

The Evaluation Team determined that for the purposes of this impact study, the most reasonable approach was not to get mired down in assessing project performance against a fixed set of early objectives or mid-project work plans. After all, the impact study was not a project audit *per se*. The Evaluation Team choose to focus on the two primary objectives that remained essentially unchanged throughout the course of EAPS work in the Czech Republic, namely, providing investment packaging support and technical assistance to municipalities to help them secure grants from the State Environmental Fund (FINANCE PROJECTS) and helping the Fund facilitate lending, strengthen operations, and improve resource allocations (STRENGTHEN ENVIRONMENTAL FUND). The EAPS Work Plans (May, 1996), Project Scope of Work, (June, 1996), and Final Project Report (March, 1998) all describe the “...the two prongs of the EAPS project—investment packaging for municipalities and technical assistance to the SFZP...”. The EAPS country manager, regional coordinators, field administrator, and project manager all also agreed that these two objectives best characterized what EAPS tried to accomplish.

From a strictly financial perspective, focusing on investment packaging for municipalities (FINANCE PROJECTS) made sense too because, according to the EAPS Czech Republic Final Report (1998, P.II-6), nearly \$650,000 or 50 percent of the entire project budget of \$1,300,000 “...was expended to assist specific environmental projects...”. The case for assessing EAPS role in strengthening the Fund also comes from several sources including the conclusion that municipalities and the SFZP [Fund] were the “...two essential entities in the Czech Republic...” which were targeted by the EAPS Team for long-term improvement [EAPS Czech Republic Final Report, 1998, p I-2].

ILLUSTRATIVE EAPS OBJECTIVES

I. 1994 RFP/Technical Proposal – EAPS Overall Objectives

1. **FINANCE ENVIRONMENTAL PROJECTS** – Facilitate the financing of economically viable pollution and prevention, abatement, and mitigation projects aimed at reducing environmental health risks.
2. **BUILD CAPACITY** – Transfer skills and build capacity in environmental project development and financing to entities and personnel in CEE/NIS countries.
3. **BUY NEEDED EQUIPMENT** – Provide local projects with an equity infusion in the form of environmental equipment.
4. **ESTABLISH TEAMS** – Establish in-country technical teams to support the project objectives and evaluation.

II. 1995 EAPS Contract – Scope of Work

Task 1: **FINANCE ENVIRONMENTAL PROJECT** – Project identification, selection, and packaging for loan review.

Task 2: **BUILD CAPACITY** – Institutional capacity building, training, and information dissemination.

Task 3: **BUY NEEDED EQUIPMENT** – Equipment purchase program.

Task 4: **ESTABLISH RESIDENT ADVISORS** – Placement of in-country full-time financial and technical advisors.

III. 1998 EAPS Czech Republic Final Report—Project Objectives

1. **BUILD LOCAL CAPACITY** – Build institutional capacity in environmental, technical, and financial project evaluation and in packaging environmental investments
2. **FINANCE ENVIRONMENTAL PROJECTS** – Facilitate financing of high-priority pollution prevention and abatement projects that enhance the performance and quality of municipal environmental services.
3. **STRENGTHEN LOCAL GOVERNMENT** – Increase the role of local government in environmental decisions affecting their communities.
4. **STRENGTHEN ENVIRONMENTAL FUND** – Ensuring the sustainability of environmental initiatives by improving the ability of domestic funding sources, primarily the State Fund for the Environment (SFZP), to allocate resources.

ANNEX B – CZECH REPUBLIC EAPS EVALUATION STUDY METHODOLOGY

Washington Interviews:

Prior to any data collection or setting an evaluation agenda, primary project documentation was assembled in Washington and a review of all secondary sources was undertaken. Entrance interview and subsequent meetings were conducted with staff in USAID's Bureau for Europe and Eurasia and Chemonics, International, Inc. the prime EAPS contractor. Two structured telephone interviews were also conducted in the US with the long-term resident advisor to the Czech State Environmental Fund.

Research Questions and Data Collection:

The assessment team developed a set of research question for municipalities and funds and then developed questionnaires and topical guides that were used for all interviews. These were later field tested in Northern Bohemia and revised slightly. The 4-person team initially conducted a number of interviews together to standardize routines, and then divided into two data collection teams.

Field Interviews:

Interviews were held with staff of the Czech State Environmental Fund and Ministry of Environment staff. Entrance and exit interviews were also held with the EAPS country manager, regional coordinator, and field administrator. Post-data collection interviews were held with USAID/Warsaw staff knowledgeable about EAPS in general. Interviews lasted approximately 2 hours and numerical data were entered on to a spreadsheet.

Sampling:

According to final report documentation and verification with the former EAPS country manager in the field, it was determined that 14 municipalities and two industries (n=16) received assistance — fifteen received assistance in investment packaging and one in policy formulation. The CDIE-team visited 13 of these sites or just over 80% of all EAPS-assisted project sites.

ANNEX C – LEVERAGING

In developing this section the team has one major point:

Funds are not leveraged until they are committed.

The EAPs Final Report presentation on leveraging is somewhat misleading. The problem with the Final Report's definition is that they counted all projects that EAPS worked on as leveraged and reported them in tables as if completed. Table B-1 presents data from the 1998 EAPS Final Report Table II-5 (Body), data from the report and annexes of the Final Report (Annex) and the results of the team's interviews.⁴⁷

Table B-1

Municipalities	(U.S. \$1,000)	(U.S. \$1,000)	(U.S. \$1,000)
	Final Report (Body)	Final Report (Annex)	Field Visits
Bilina	312	312	312
Chomutov	580	580	290
Duchov	360	0	0
Jilove	1,400	--	0
Dolni Poustevna	1,500	1,500	0
Krasna Lipa	2,240	2,240	2,240
Liberec	916	916	916
Litomerice	640	0	0
Ludgerovice	579	579	579
Opava	1,880	0	0
Orlova	212	0	0
Petrovice U Karvine	300	300	300
Polanka	560	560	560
Svinov	256	256	256
Roznov	3,533	3,533	0
Vratimov	3,000	3,000	3,000
TOTALS	18,268	12,276	8,453
USAID Cost	650	650	650
Leveraging Ratio	28	19	13

When adjustments are made for projects that were not funded or only partially funded, leveraged funds drops from \$18.3 million to \$8.9 million. The leveraging ratio falls from 1:28 to 1:13.

⁴⁷ The team did not visit Orlova, Polanka, and Svinov. For these sites, the data in the third column is the same as that in the second column of the table.

APPENDIX D – LOAN APPROVAL RATES

EAPS helped municipalities to different degrees with the SFZP application. Depending upon the skills available at the municipality, this assistance took a variety of forms, as follows:

- working with municipal staff on the application and enclosures
- supervising the flow of necessary documents
- completing the enclosures
- completely preparing the application and the enclosures

Assessing the effectiveness of project packaging assistance is not simply a matter of considering loan approval rates. This is because loan approval was dependent upon a number of factors, not all of which were (or could have been) encompassed by EAPS assistance. Key among these factors were that the fund was oversubscribed and the consequent importance of timing, geographic considerations, nature of project, and political considerations.

The SFZP was oversubscribed, receiving far more applications for loans than it could possibly fund from its limited resources. One key reason therefore why applications were approved was the ability of the SFZP to provide funding at the time the application was made. Thus, a good application could be turned down because it was sent to the fund late, after it had disbursed the majority of its funds for a given fiscal year. Similarly, a poor application could be funded partially because it was sent in early enough to avoid stiffer competition. Timing was critical.

Superimposed upon this timing factor are the fund's other loan application criteria. Among these are geographic considerations, such as the number of applications already disbursed for a given district, and the kind of project proposed. For example, coal-to-gas conversions were given greater consideration than waste-heat utilization. Lastly, for part of the period that the project was active, the Minister of the Environment had the power to veto recommendations made by the fund. Thus, receiving a loan depended upon a number of factors and cannot be attributed solely to EAPS assistance. So, loan approval rate is a measure of the sum of all these factors, and not just EAPS assistance.

In some cases, such as Dolni Poustevna and Krasna Lipa, EAPS help with the application was regarded as crucial to its success. In others, such as Tanex-Litomerice and Teplo-Vratimov, the provision of EAPS assistance was not enough, and the application was rejected or the financing never provided. Given the above discussion on the multiplicity of relevant factors, it is neither entirely accurate to attribute the success of the former two municipalities to EAPS assistance, nor the failure of the latter two to sub-par EAPS assistance.

A qualitative, and admittedly imperfect, way to get past this dilemma of loan approval attribution is to consider the answers of municipal staff to the following key questions:

- Would it have been possible to secure loan approval without EAPS assistance? (an affirmative answer would indicate that EAPS assistance was not key)

- Were you able to use the assistance to secure further loans? (an affirmative answer might indicate that EAPS assistance was good enough to build capacity at the municipal level to secure loans)⁴⁸

Most municipalities indicated that their project would have eventually been approved even without EAPS assistance.⁴⁹ Relatively few were able to use the EAPS assistance to secure future loans from SFZP or other sources. Given this, it is most probable that EAPS assistance with loan packaging was not a very effective intervention.

⁴⁸ While securing future loans is itself subject to this very same problem of attribution, securing loans after the end of EAPS assistance does lend credence to the hypothesis that EAPS assistance was a major factor in loan approval. Also, considering whether future loans were funded as a proxy measure is confounded by the fact that not all municipalities had developed other projects to even need funding, although most indicated that they needed some form of wastewater/sewage project. However, a lack of enthusiasm for developing new projects itself does not bode well for the experience with EAPS assistance.

⁴⁹ That the projects were funded earlier is worthwhile, but not in itself indicative of the effectiveness of the intervention.

ANNEX E – Persons Contacted

USAID – Washington

Angela Crooks
Loren Schulze

EAPS Contractor

Chemonics
Avrom Bendavid-Val

Czech Republic

Ministry of the Environment
Radka Bucilova

SFZP

Vaclav Chytil
Milos Rybicka
Ivan Spevak
Ales Vychodil

Consultants

Project Foundation North
Lubomir Paroha

RIEA
Bretislav Klic

SEVEN
Jiri Zeman

Site Visits

Bilina
Cestmir Duda
Milan Pechacek

Chomutov

Jiri Roth

Dolni Poustevna

Miroslav Jemelka

Havírov

Karel Hampl

Jana Navratova

Jilove

Petr Schlosinger

Krasna Lipa

Zbynek Linhart

Liberec

Miroslav Kroutil

Dana Stefanova

Litomerice & Tanex Corporation

Jan Zadrazil

Josef Zuch

Ludgerovice

Bernard Lukas

Opava

Dagmar Kureckova

Marie Vavreckova

Petrovice U Karvine

Jiri Kubacka

Petr Trojek

Roznov

Vaclav Mikusek

Teplo-Vratimov (Nova Hut Steel Mill)

Milan Novotny

Jan Pomilko

Teplo-Vratimov

Josef Vasicek

Vratimov (city)
Alois Zajicek
Iveta Zechova

Poland

USAID – Poland

Scott Dobberstein

Consultants

CityProf Consulting S.C.
Gregorz Moorthi
David Toft

BRK (Biuro Rozwoju Krakowa), S.A.
Jan Bieda
Andrzej Lazecki
Marzanna Schnotale

Funds

Eco Fund
Stanislaw Sitnicki

Katowice Regional Fund
Jan Huzarewicz
Krzysztof Krzyzanowski
Tadeus Sadowski

Krakow Regional Fund
Wieslaw Bury

Site Visits

Gliwice (PEC Energy Utility)
Jerzy Antoniak
Irena Wilk

Krakow
Stanislaw Chironowski, Provincial Department of Environmental Protection
Ewa Olszowska, Municipal Department of Environmental Protection

Raciechowice
Kazimiera Goraczko